

NOTES ON THE ECOLOGY OF *CULISETA MACCRACKENAE*
IN SAN BERNARDINO AND RIVERSIDE COUNTIES,
CALIFORNIA

(Diptera: Culicidae)

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For the past year, data have been obtained on the breeding habits of *Culiseta maccrackenae* Dyar and Knab. There is some question as to previous collections having been made from San Bernardino County. Several specimens collected by the authors have been deposited with the Bureau of Vector Control, Berkeley.

Collection records from Urbita Springs, near San Bernardino, California:

Fourth instars, pupae and adults, March 8, 1951.

Four instars, March 15, 1951.

Adults (numerous); May 13, 1951. Collected in clumps of tall dead grass in willow brush.

Habitat: *Culiseta maccrackenae* were quite abundant at Urbita Springs during March, 1951. After careful inspection of breeding conditions, the area was dusted by mosquito control personnel. Larvae and pupae on March 8, 1951 were numerous in a borrow pit 10 ft. in diameter and located in a grove of deciduous trees not in leaf. The water was 11 - 44 cm. deep, partially shaded, and contained considerable decaying debris in the form of tree leaves, twigs, and grass. Most of the surface was covered by *Lemna*, duckweed. The pH was 7.2 and the temperature ranged from 12° C. at 9:00 a.m. to 15° C. at 2:20 p.m. on February 22, 1951.

Adult mosquitoes were resting on the 2 - 3 ft. high moss-covered banks of this pool and under overhanging grass. Many were also collected in tall dead grass, weeds and brush in the immediate vicinity of the breeding area. *Culiseta maccrackenae* females were also taken from inside the lodges of *Neotoma fuscipes* on February 22, and November 29, 1951 in San Timoteo Canyon, Riverside County.

At Urbita Springs, several females attempted to bite at which time they were collected alive in shell vials and returned to the laboratory. In the laboratory at 3:45 p.m. on March 8 one female completely engorged with blood on the author's arm. On March

21, seven adult females from the March 8 collection were given the opportunity to feed on a human subject, one fed to complete engorgement and two took partial blood meals. The latter two had consumed considerable sugar water before the opportunity to feed on blood was presented to them. April 1, at midnight, one female fed readily on a human host and obtained almost a complete blood meal. Bites of this species were painful for one-half hour following the bite and large welts appeared at each feeding point. Welts were visible as long as two days following the initial feedings. The above data indicate that this species will feed on a human host, but certainly man is not one of its preferred hosts.

Culiseta maccrackena were observed copulating readily in the daytime under laboratory conditions. A male 12 hours of age copulated with a female 2½ days old, in a plastic cylinder 20" x 6.5". No blood meal had been obtained by the female. This pair remained in copulation from 9:45 a.m. until 2:45 p.m. Other pairs remained in copulation for at least two hours.

Males and females approach face to face prior to copulation. After copula is effected, they face in opposite direction. The male has frequently been seen in a vertical position suspended head down, supported only by the genitalia in copula.

In San Bernardino and Riverside counties, *Culiseta maccrackena* breeds in very limited numbers, except for certain isolated pools which may in the winter and spring seasons contain moderate numbers of larvae and pupae. This is in agreement with reports on their breeding in central and northern California.

ADDITIONAL COLLECTIONS OF MOSQUITOES FROM WOOD RATS' NESTS

(Diptera: Culicidae)

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Anopheles freeborni Aitken has been reported from the nests of *Neotoma fuscipes* Baird (Ryckman and Arakawa 1951).